Team Logbook Scoring Tool

(Total Possible Points = 21)

Possible Answers to Arizona Mapping Logbook Questions: (Total Points = 4)

1. What was your measurement strategy? (Did you use floor tiles or other markers?) **(1 point)**

Student should be clear in explaining the strategy used. (Ex. We used the floor tiles as the grid for our map. One floor tile is equal to 60 cm or 1 square on our map.)

2. What units are you using for measurement? **(.5 points)**

Standard or nonstandard measurements should be accepted. (Ex. Feet, inches, cm, step length, 1 floor tile, etc.)

3. How accurate are your measurements? **(.5 points)**

This is a place for students to explain limitations of their map. (Ex. The measurements are accurate within about 6 cm's. They aren't perfect because we had to hurry to get our map done.)

4. How precise do you think they need to be? (Talk to your calibration team.) **(.5 points)**

We believe that they are accurate enough if we vary by 6 cm's, because we can readjust the commands that we send to the rover once we see how the rover performs on Mars.

5. Look at your map. What is the scale of your map? **(.5 points)**

(Ex. 1 square = 60 cm)

6. Can you identify regions that might be difficult for your rover to navigate through? **(.5 points)**

(Ex. We think that it will be difficult through the cluster of chairs in the center of the map. We would rather send our rover around the chairs than through them.)

7. What are the most important features on your map for the rover? **(.5 points)**

(Ex. The cluster of chairs in the center of the map, and the table in the right corner.)

Possible Answers to Arizona Communication Logbook Questions: (Total Points = 5)

Communications Chart should include following completed columns: **Command Sequences (1 point)**
Successful? (.5 point)
Time Taken (.5 point)

1. How many commands can your rover remember? **(.5 points)**

   (Ex. Our rover can reliably remember three commands at a time.)

2. Does it make a difference if you try to say the sequence fast or slow? **(.5 points)**

   (Ex. We find that if we say our command slowly, the rover can remember it faster. This saves time because we don't have to keep repeating the command sequence.)

3. Does telling your rover to move Forward 10 get the same results as Forward 5 twice? How close are the results, in both time and distance? (Talk to the calibrations team!) **(1 point)**

   (Ex. Our rover moves forward a little more when we say forward 5 twice, than forward ten once. We think this is because his first step is larger than the steps he takes after the first step. He moves faster when we say forward 10, but he gets further with forward 5 twice.

4. How long does it take you to move the rover across the room? **(.5 points)**

   (Ex. It takes our rover 65 seconds to move across the room in a straight line.)

5. Is it faster to take your rover over obstacles or around them? **(.5 points)**

   (Ex. We found that it is much faster to take our rover around obstacles than over them.)

Possible Answers to Arizona Calibration Logbook Questions: (Total Points = 10)

A. Calibration Chart should include the following components: **Measurement Unit Stated (.5 points)**
>4 Trials increasing to 5 steps (2 points)

B. Calibration Graph (5 points) x axis= number of steps, y axis= distance traveled. The data should follow a linear pattern, with distance traveled increasing with number of steps. A scatter plot with line of best fit is the most appropriate way to display this data. Graph should include a title, correct axes, labels, units, and appropriate scale.

1. What is your measurement strategy? (from the toe, left foot, right foot, etc.) **(.5 points)**

(Ex. Our rover walked heal, toe, which measured 30 cm for one step.)

2. How accurate are your measurements? **(.5 points)**

(Ex. Our measurements are accurate within about 3 cm.)

3. How precise do you think they need to be? (Talk to your mapping team!) **(.5 points)**

(Ex. We think that our measurements are accurate enough because the map is not completely accurate either. Once we get our rover in the general area of the sample site, we will be able to make adjustments.)

4. Look at your graph. What is the relationship between number of steps and distance traveled? Estimate how far the rover will go in 10 steps. **(1 point)**

(Ex. As the number of steps increases, so does the distance traveled. Our graph goes up in a pretty linear pattern. Students may also tell the equation for the line of best fit.)

Possible Answers to Arizona Rover Logbook Questions (Total Points = 2)

1. What are the two most difficult aspects of being a Rover? Why are these things difficult? **(2 points)**

(Ex. The most difficult part of being the rover was having to trust my teammates while wearing a blindfold. I am never sure where I am going, or if I am going to run into something. I also find myself wanting to execute commands before the command sequence is finished.)